查询APA2822供应商

APA2822

Dual Low-Voltage Power Amplifier

Features

- Supply Voltage Down to 1.8V
- Low Crossover Distortion
- Low Quiescent Current
- Bridge-tied or Stereo(Single-ended) Configurations
- Both DIP-8 and SOP-8 packages available

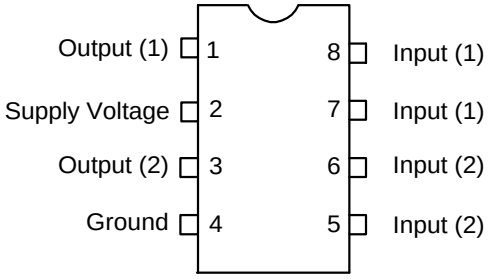
General Description

The APA2822 is a monolithic integrated circuit in 8-lead PDIP package. It is intended for use as dual audio power amplifier in portable cassette players, active speakers, and radios.

Applications

- Audio Amplifiers
- Active Speakers
- Sound Cards
- Filters
- Analog Circuit

Pin Description



Ordering Information

APA 2822 □□-□□

- Handling Code
- Temp. Range
- Package Code

Package Code
J : PDIP - 8 K : SOP - 8
Temp. Range
C : 0 to +70° C
Handling Code
TU : Tube

ANPEC reserves the right to make changes to improve reliability or manufacturability without notice, and advise customers to obtain the latest version of relevant information to verify before placing orders.

Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
V_{CC}	Supply Voltage	15	V
I_O	Peak Output Current	1	A
V_I	Input Voltage	15	V
P_{TOT}	Power Dissipation at T_{AMB} = 50°C at T_{CASE} = 50°C	1 1.4	W
T_{STG} , T_J	Storage and Junction Temperature Range	-40 to +150	°C

Thermal Data

Symbol	Parameter		Rating	Unit
$R_{TH\ J\text{-}AMB}$	Thermal Resistance Junction-Ambient	Max.	100	°C/ W
$R_{TH\ J\text{-}CASE}$	Thermal Resistance Junction-Pin	Max.	70	°C/ W

Electrical Characteristics (V_S= 6V , T_A = 25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions		APA2822 Min.	APA2822 Typ.	APA2822 Max.	Unit
STEREO (test circuit of Figure 1)							
V_S	Supply Voltage			1.8		15	V
V_O	Quiescent Output Voltage	V_S =3V			2.7 1.2		V
I_D	Quiescent Drain Current				6		mA
I_B	Input Bias Current				100		nA
P_O	Output Power (f = 1kHz, d = 10%)	R_L =32Ω	V_S = 9V		300		mW
			V_S = 6V		120		
			V_S = 4.5V		60		
			V_S =3V		20		
			V_S = 2V		5		
		R_L =16Ω	V_S = 6V		220		
		R_L =8Ω	V_S = 9V		1000		
			V_S = 6V		380		
		R_L =4Ω	V_S = 6V		650		
			V_S = 4.5V		320		
			V_S = 3V		110		

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Electrical Characteristics Cont. (V_S= 6V , T_A = 25°C, unless otherwise specified)

Symbol	Parameter	Test Conditions	APA2822			Unit
			Min.	Typ.	Max.	
d	Distortion (f = 1kHz)	R_L =32Ω P_O = 40mW R_L =16Ω P_O = 75mW R_L = 8Ω P_O = 150mW		0.2 0.2 0.2		%
STEREO (test circuit of Figure 1)						
G_V	Closed Loop Voltage Gain	f = 1kHz		39		dB
ΔG_V	Channel Balance				±1	dB
R_I	Input Resistance	f = 1kHz	100			kΩ
e_N	Total Input Noise	R_S = 10kΩ B = 22Hz to 22kHz		2.5		μV
SVR	Supply Voltage Rejection	f = 100Hz, C1 = C2 = 100μF		30		dB
C_S	Channel Separation	f = 1kHz		50		
BRIDGE (test circuit of Figure 2)						
V_S	Supply Voltage		1.8		15	V
I_D	Quiescent Drain Current	R_L =8Ω		6	9	mA
V_{OS}	Output Offset Voltage (between the outputs)	R_L =8Ω			±50	mV
I_B	Input Bias Current			100		nA
P_O	Output Power (f = 1kHz, d = 10%)	R_L =32Ω V_S = 9V V_S = 6V V_S = 4.5V V_S =3V V_S = 2V		1000 400 200 65 8		mW
		R_L =16Ω V_S = 9V V_S = 6V V_S = 3V		2000 800 120		
		R_L =8Ω V_S = 6V V_S = 4.5V V_S = 3V		1350 700 220		
		R_L =4Ω V_S = 4.5V V_S = 3V V_S = 2V		1000 350 80		
d	Distortion	P_O = 0.5W, R_L =8Ω , f = 1kHz		0.2		%
G_V	Closed Loop Voltage Gain	f = 1kHz		39		dB
R_J	Input Resistance	f = 1kHz	100			kΩ
e_N	Total Input Noise	R_S =10kΩ , B = 22Hz to 22kHz		3		μV
SVR	Supply Voltage Rejection	f = 100Hz		30		dB
B	Power Bandwidth (-3dB)	R_L =8Ω , P_O = 1W			120	kHz

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Test Information

Figure 1 : Test Circuit (Stereo)

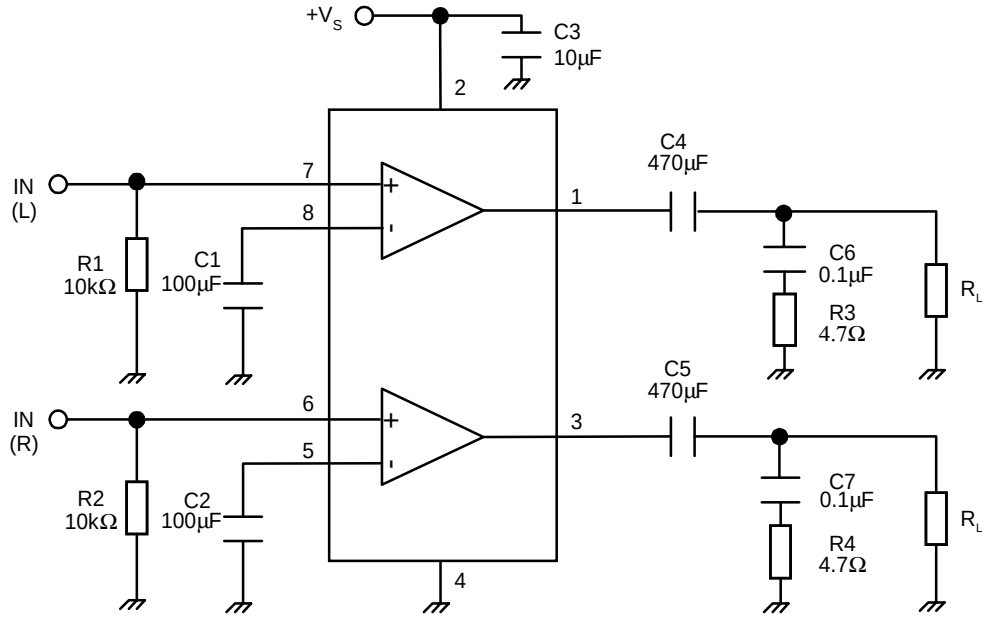
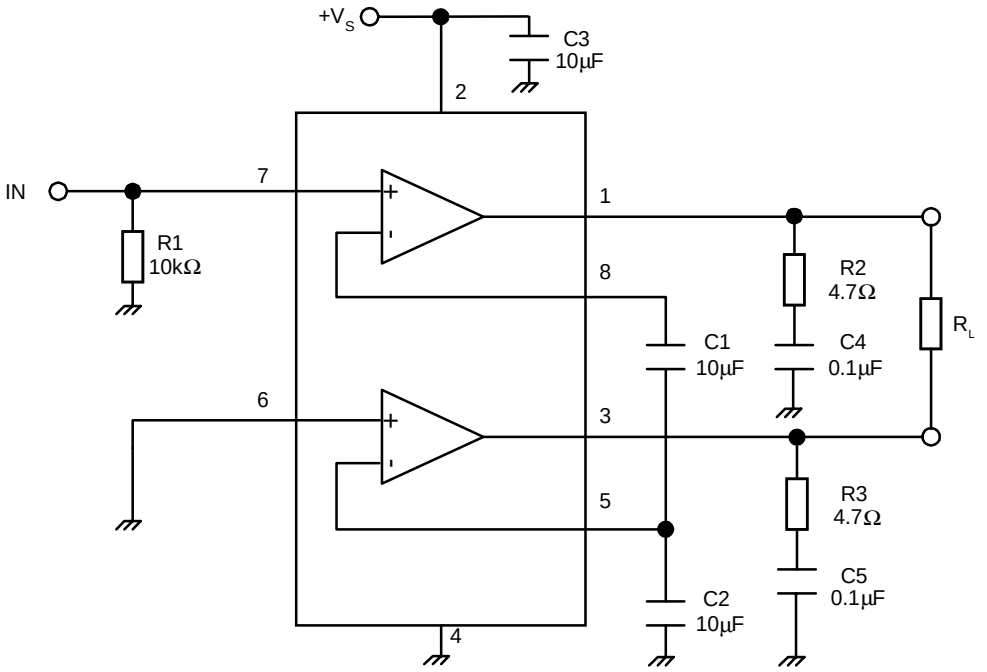
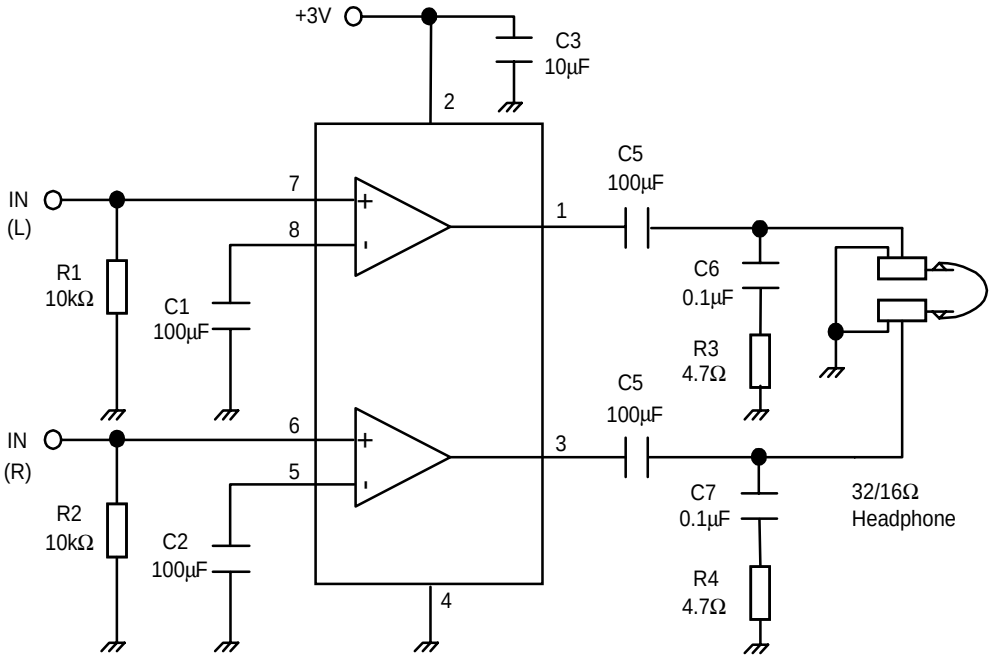


Figure2 : Test Circuit (Bridge)



Test Information

Figure 3 : Typical Application in Portable Players



Customer Service

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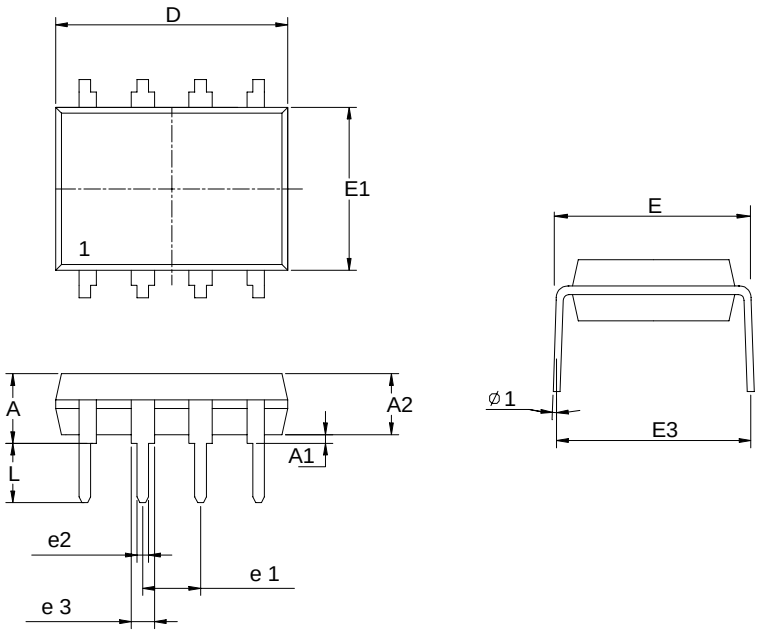
Packaging Information

PDIP-8 pin (Reference JEDEC Registration MS-001)



Dim	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A		5.33		0.210
A1	0.38		0.015	
A2	2.92	3.68	0.115	0.145
D	9.02	10.16	0.355	0.400
e1	2.54BSC		0.100BSC	
e2	0.36	0.56	0.014	0.022
e3	1.14	1.78	0.045	0.070
E	7.62 BSC		0.300 BSC	
E1	6.10	7.11	0.240	0.280
E3		10.92		0.430
L	2.92	3.81	0.115	0.150
ϕ 1	15°		15°	

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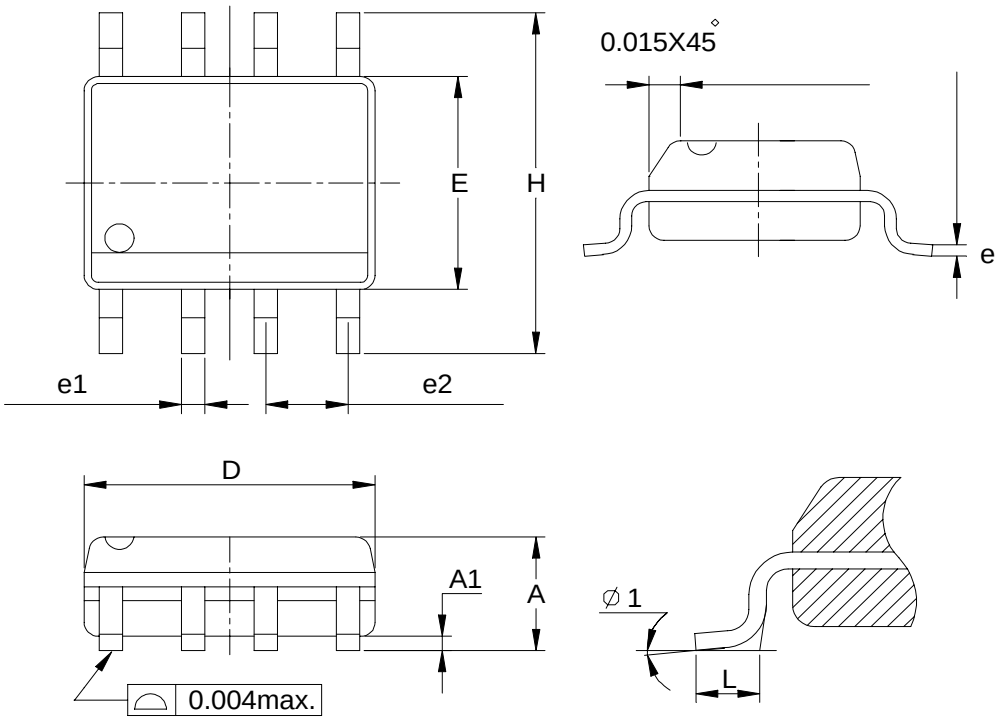
Packaging Information

SOP-8 pin (Reference JEDEC Registration MS-012)



Dim	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
D	4.80	5.00	0.189	0.197
E	3.80	4.00	0.150	0.157
H	5.80	6.20	0.228	0.244
L	0.40	1.27	0.016	0.050
e1	0.33	0.51	0.013	0.020
e2	1.27BSC		0.50BSC	
ϕ 1	0°	8°	0°	8°

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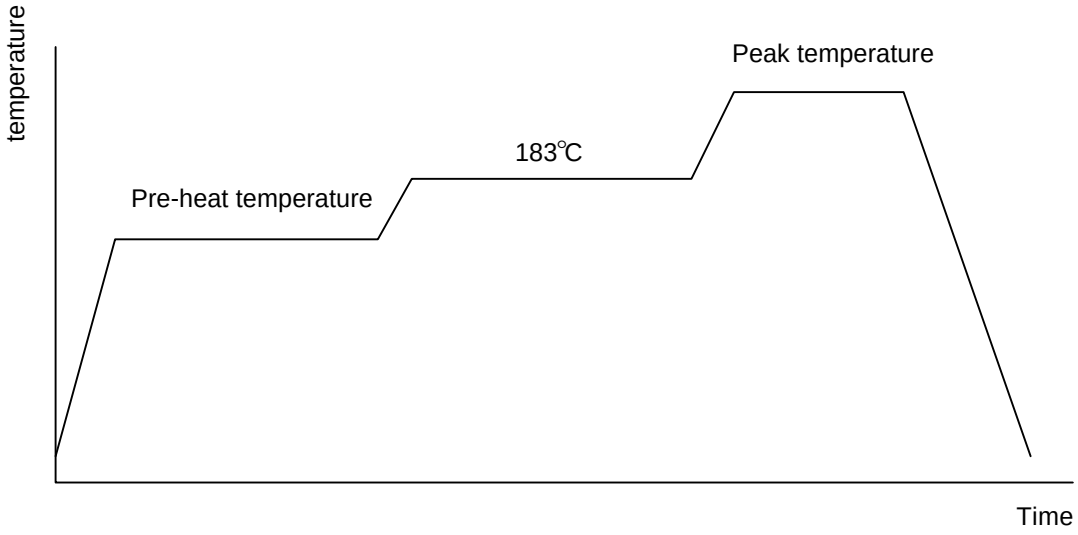
Physical Specifications

Terminal Material	Solder-Plated Copper (Solder Material : 90/10 or 63/37 SnPb
Lead Solderability	Meets EIA Specification RSI86-91, ANSI/J-STD-002 Category 3.
Packaging	2500 devices per reel

Reflow Condition (IR/Convection or VPR Reflow)

Reference JEDEC Standard J-STD-020A APRIL 1999



Classification Reflow Profiles

	Convection or IR/ Convection	VPR
Average ramp-up rate(183°C to Peak)	3°C/second max.	10 °C /second max.
Preheat temperature 125 ± 25°C)	120 seconds max	
Temperature maintained above 183°C	60 – 150 seconds	
Time within 5°C of actual peak temperature	10 –20 seconds	60 seconds
Peak temperature range	220 +5/-0°C or 235 +5/-0°C	215-219°C or 235 +5/-0°C
Ramp-down rate	6 °C /second max.	10 °C /second max.
Time 25°C to peak temperature	6 minutes max.	

Package Reflow Conditions

pkg. thickness ≥ 2.5mm and all bgas	pkg. thickness < 2.5mm and pkg. volume ≥ 350 mm³	pkg. thickness < 2.5mm and pkg. volume < 350mm³
Convection 220 +5/-0 °C		Convection 235 +5/-0 °C
VPR 215-219 °C		VPR 235 +5/-0 °C
IR/Convection 220 +5/-0 °C		IR/Convection 235 +5/-0 °C

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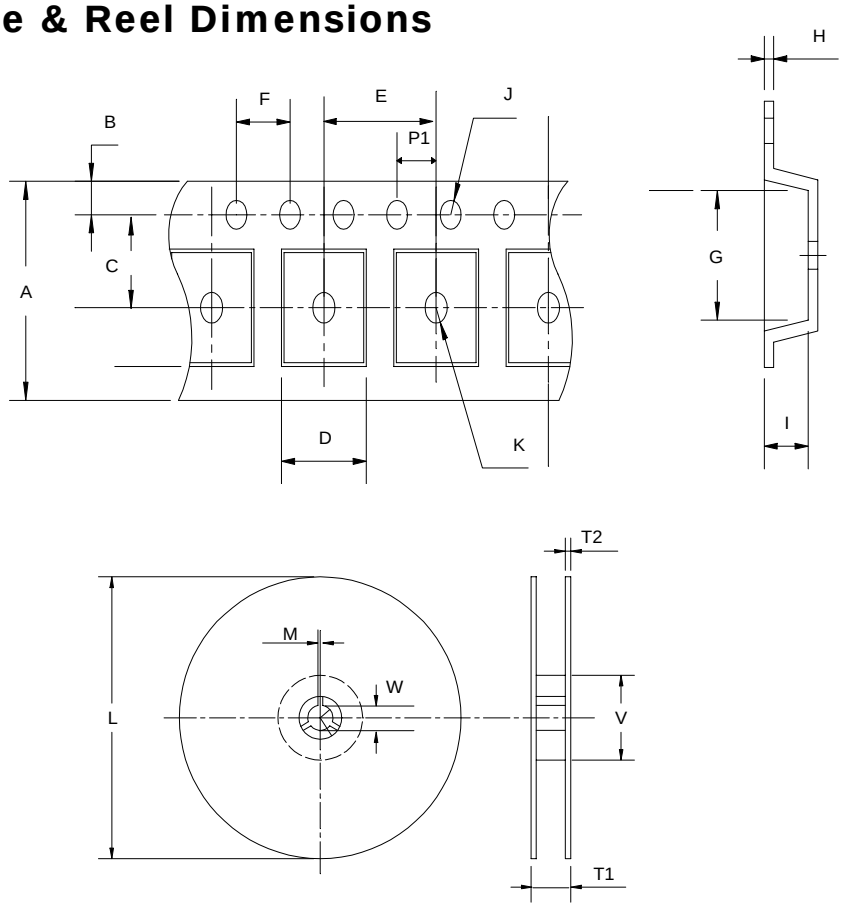
Reliability test program

Test item	Method	Description
SOLDERABILITY	MIL-STD-883D-2003	245°C , 5 SEC
HOLT	MIL-STD-883D-1005.7	1000 Hrs Bias @ 125 °C
PCT	JESD-22-B, A102	168 Hrs, 100 % RH , 121°C
TST	MIL-STD-883D-1011.9	-65°C ~ 150°C, 200 Cycles
ESD	MIL-STD-883D-3015.7	VHBM > 2KV, VMM > 200V
Latch-Up	JESD 78	10ms , I_{tr} > 100mA

Carrier Tape & Reel Dimensions



Application	A	E	B	C	J	K	F	P1	D
SOP 8N	12 + 0.3 12 - 0.1	8.0 ± 0.1	1.75± 0.1	5.5± 0.1	1.55± 0.1	1.5± 0.25	4.0 ± 0.1	2.0 ± 0.1	6.4 ± 0.1
Application	G	I	H	L	V	W	M	T1	T2
SOP 8N	5.2 ±0.1	2.1 ± 0.1	0.3±0.013	330±1	100±1	13+0.5 13 -0.1	2.2±0.1	12.5± 0.5	2.0 ± 0.2

(mm)

Cover Tape Dimensions

Carrier Width	12
Cover Tape Width	9.3

(mm)

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